



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/522,546	01/27/2005	Hidetsugu Ikeda	OHTN:021	8499
27890 7590 11/28/2007 STEPTOE & JOHNSON LLP 1330 CONNECTICUT AVENUE, N.W. WASHINGTON, DC 20036			EXAMINER CROUSE, BRETT ALAN	
			ART UNIT 1794	PAPER NUMBER
			MAIL DATE 11/28/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/522,546	Applicant(s) IKEDA ET AL.	
	Examiner Brett A. Crouse	Art Unit 1794	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 September 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1, 2 and 5-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 2 and 5-14 is/are rejected.
- 7) ☒ Claim(s) 15 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☒ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

This office action is in response to the amendment, filed 12 September 2007, which cancels claims 3 and 4, amends claims 1, 2, 9, and 13, and adds new claim 15. Claims 1, 2, and 5-15 are pending.

### ***Response to Amendment***

The rejections of:

claims 9 and 13 under 35 U.S.C. 112, second paragraph;

claims 1-9 and 14 under 35 U.S.C. 102(b) as being anticipated by Shi et al., US 5,935,721;

claims 1, 3, 5, 7-9 and 14 under 35 U.S.C. 102(b) as being anticipated by Kohama et al., JP 2002-063988;

claims 1-10 and 12-14 under 35 U.S.C. 102(b) as being anticipated by Maki et al., JP 2000-012229;

claim 10 under 35 U.S.C. 103(a) as being unpatentable over Shi et al., US 5,935,721;  
and

claim 11 under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Maki et al., JP 2000-012229;

are overcome by the amendment, filed 12 September 2007.

### ***Miscellaneous***

Art Unit: 1794

The miscellaneous issues raised in the previous office action have been overcome by the amendment, filed 12 September 2007.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Marvel et al., Journal of the American Chemical Society, (1939), Volume 61, Pages 895-897.

The reference teaches the synthesis of 2,8-Diphenylchrysene. This meets the limitations of formula (1), claim 1, when Ch is chrysene and Ar<sup>1</sup> and Ar<sup>2</sup> are phenyl. 2,8-Diphenylchrysene also meets the limitations of formula (3), claim 2, when Ch<sup>3</sup> is chrysene, a and b are 1, L<sup>1</sup> and L<sup>2</sup> are single bonds, and Ar<sup>3</sup> and Ar<sup>4</sup> are phenyl.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Innes, US 3,711,567 hereinafter known as Innes.

Innes teaches:

Column 4, line 15 through column 5, line 40, examples 1-4, teach substituted and unsubstituted bitriphenylene. This meets the limitations of formula (2) of claim 1, when L is a single bond and Ch<sup>1</sup> and Ch<sup>2</sup> are triphenylene.

Art Unit: 1794

Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Reimlinger, US 3,121,122, hereinafter known as Reimlinger.

Reimlinger teaches:

Column 4, line 73 through column 5, line 23, formula (F), teaches 1,4-Diphenyl

Triphenylene. This meets the limitations of formula (1), claim 1, when Ch is triphenylene and Ar<sup>1</sup> and Ar<sup>2</sup> are phenyl. 1,4-Diphenyl Triphenylene also meets the limitations of formula (3), claim 2, when Ch<sup>3</sup> is triphenylene, a and b are 1, L<sup>1</sup> and L<sup>2</sup> are single bonds, and Ar<sup>3</sup> and Ar<sup>4</sup> are phenyl.

Claims 1, 2, and 5-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Ikeda et al., JP 2000-273055, hereinafter known as Ikeda.

Ikeda teaches:

Paragraph [0003], teaches a basic electroluminescent device structure.

Paragraph [0005], teaches the compounds of formula (I) can be used as a component in an electroluminescent device.

Paragraphs [0010]-[0013], formula (I), teach a compound of formula (I) useful as a luminous material. Condensed multi-ring compounds including triphenylene, chrysene, and perylene

Paragraph [0018], compound (B-2), a triphenylene derivative meeting the limitations of formula (1) of claim 1 and formula (3) of claim 2.

Art Unit: 1794

Paragraph [0019], compound (B-3), teaches a chrysene derivative meeting the limitations of formulae (1) and (2) of claim 1, and formula (3) of claim 2. The compound above it on the page also meets the limitations of formula (1) of claim 1 and formula (3) of claim 2.

Paragraph [0020], fourth compound from the top of page, teaches a perylene derivative meeting the limitations of formula (1) of claim 1 and formula (3) of claim 2.

Paragraph [0021], compound (A-7), teaches a perylene derivative meeting the limitations of formula (1) of claim 1 and formula (3) of claim 2.

Paragraph [0033], teaches the compounds of the invention provide an electron transport function, a hole transport function, and luminescent material function.

Paragraph [0034], teaches the compounds of the invention can be mixed with a styryl amine compounds in the luminous layer.

Paragraph [0035], teaches that blue emission can be obtained in an electroluminescent device having a compound of formula (I) in the luminous layer. The passage additionally teaches perylene derivatives are suitable.

Paragraphs [0068]-[0069], teach an electroluminescent device having a compound of formula (I) in the luminous layer.

Paragraphs [0070]-[0077], provide additional examples.

With regard to claims 5 and 6, the statements of intended use are accorded little patentable weight.

Art Unit: 1794

Claims 1, 2, and 5-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Hosokawa et al., WO 2000/039247, hereinafter known as Hosokawa, as evidenced by Hosokawa et al., US 2003/0072966, which is being used as a translation.

Hosokawa teaches:

Paragraphs [0010]-[0040] and [0056], formulae (1, 3-11, 11'), teach a material for electroluminescent devices.

Paragraphs [0047]-[0049], teach an electroluminescent device in which compounds of formulae (1, 3-11, 11'), can be used as a hole injection, hole transport, and light emitting material.

Paragraph [0099], provides various example compounds meeting the limitations of claims 1 and 2. Attention is directed to compounds (29), (32), (33), (34), (37), (38), (39), (42), (43), (44), (46), (54), (55), (56), (115), and (125).

Paragraph [0104], teaches that mixtures comprising the compounds of formulae (1, 3-11, 11') can be used as hole injection, hole transport, and light emitting materials. The paragraph additionally teaches blue light emission.

#### ***Allowable Subject Matter***

Claim 15 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Art Unit: 1794

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brett A. Crouse whose telephone number is 571-272-6494. The examiner can normally be reached on Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrell H. Morris can be reached on 571-272-1478. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1794

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/BAC/ 19 November 2007



TERREL MORRIS  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700